

Mr. Hinds's genus *Trilasmis*, and it also resembles that genus in the anterior basal and the upper opercular valves being very small, so that it forms the passage between *Pentalasmis* and that genus.

There are in Mr. Fryer's collection two specimens, which differ considerably from one another. One is pale red and elongate-ovate, smooth, rather compressed, and the larger opercular valves have a rather distinct line towards the extremity. The anterior basal valve is much-compressed. The second is yellowish white, pink at the base, ovate, swollen, slightly radiately and concentrically striated; the left larger opercular valve is larger than the right one, more convex, and partly inclosing it; the anterior valve and upper opercular valve are very narrow.

I propose to call the species *Anatifa crassa*. Peduncle short; valves thick, opaque, convex, large, the anterior basal valve and upper opercular valves very narrow.

Inhab. Madeira, on *Gorgonia*.

MISCELLANEOUS.

How to prevent the Attacks of the Bed-bug, Cimex lectularius.

By WALTER WHITE, Esq.

To Richard Taylor, Esq.

Nov. 6, 1848.

SIR,—May I be permitted to offer a few remarks on the communication "How to prevent the Attacks of the Bed-bug" in your last number?

It is in no depreciatory spirit that I say the means recommended are not new: more than twenty years ago I met with instances of inverted cones of glass being used as bases for bedposts; sometimes the entire leg below the framing was glass, or it stood in a glass vessel lined with a viscous fluid. Similar instances have repeatedly come to my knowledge since, and I may add that due precautions were taken to isolate the bedstead, by keeping the curtains and draperies clear of wall and floor.

In spite of such precautions bugs *will* get into bedsteads, much to the wonder of those ignorant of the reason why. I learnt it by experience during a five years' residence in New York, the head-quarters of bugs. I slept on a French bedstead, having no hangings, and placed quite free from all contact except the points by which it touched the floor. It was well searched every day, a necessary precaution where the thermometer is sometimes at 90° after sunset, yet bugs found their way into the bed. They effected their entrance by crawling up the walls and along the ceiling until over the bed, when they let themselves fall, probably aware that the shock would not be fatal. My attention was first drawn to the fact by the descent of one of the loathsome creatures into my mouth, while I was lying in a dose in the dim twilight of a summer morning: after this nauseous experience I several times observed the fall of bugs. If surprised by

daylight before their plunge, the animals would remain motionless on the ceiling until the succeeding night.

One fact, it is said, proves nothing; but I found on inquiry that the fall of bugs from ceilings was a phenomenon in their natural history generally believed in*. And a friend of mine one night placed his bed on a table with each leg in a vessel of water in the middle of a room: he also observed bugs crawl along the ceiling before sunrise and drop upon his couch.

The only effectual way to avoid the attacks of bugs is to keep the creatures out of rooms as well as out of bedsteads. Unfortunately our mistaken, not to say absurd English custom of loading our bedsteads with hangings is a great encouragement to bug-propagation. Besides, bedsteads are so seldom cleaned, whereby not only bugs but spiders have ample opportunity to establish colonies. If the cumbersome garniture of hangings were dispensed with, none but French bedsteads used, with a framed lath-bottom, so as to be easily removable—and the whole, as well as the mattresses, &c., well brushed once a week—if bedroom walls were covered with paint instead of paper—if bedroom floors were occasionally scrubbed with soap and lime, there would be but few bugs, even in London.

Light, and free circulation of air will do much towards checking the increase of these nocturnal pests. The Americans are wiser than we in matters of bedroom drapery; they avoid it altogether, or have so little as to afford no shelter to vermin.

THE GREAT SEA-SERPENT.

To the Editor of the Times.

SIR,—Subjoined is the answer to a question relative to the animal seen from the *Dædalus*, addressed to me by a nobleman distinguished in literature, and taking much interest in science.

As it contains the substance of the explanation I have endeavoured to give to numerous inquirers, in the Hunterian Museum and elsewhere, and as I continue to receive many applications for my opinion of the “Great Sea-Serpent,” I am desirous to give it once for all through the medium of your columns, if space of such value may be allotted to it.

I am, Sir, your very obedient servant,

RICHARD OWEN.

Lincoln's Inn Fields, Nov. 9.

The sketch† will suggest the reply to your query, “whether the monster seen from the *Dædalus* be anything but a Saurian?” If it be the true answer, it destroys the romance of the incident, and will be anything but acceptable to those who prefer the excitement of

* We are able to confirm the statement of our correspondent from similar instances.—ED.

† This was a reduced copy of the drawing of the head of the animal seen by Captain M'Quhae, attached to the submerged body of a large seal, showing the long eddy produced by the action of the terminal flippers.

the imagination to the satisfaction of the judgement. I am far from insensible to the pleasures of the discovery of a new and rare animal, but before I can enjoy them, certain conditions, *e. g.* reasonable proof or evidence of its existence, must be fulfilled. I am also far from undervaluing the information which Captain M'Quhae has given us of what he saw. When fairly analysed, it lies in a small compass; but my knowledge of the animal kingdom compels me to draw other conclusions from the phenomena than those which the gallant captain seems to have jumped at. He evidently saw a large animal moving rapidly through the water, very different from anything he had before witnessed—neither a whale, a grampus, a great shark, an alligator, nor any other of the larger surface-swimming creatures which are fallen in with in ordinary voyages. He writes, "On our attention being called to the object, it was discovered to be an enormous serpent" (read "animal"), "with the head and shoulders kept about four feet constantly above the surface of the sea. The diameter of the serpent" (animal) "was about 15 or 16 inches behind the head; its colour a dark brown, with yellowish white about the throat." No fins were seen (the captain says there were none; but from his own account he did not see enough of the animal to prove his negative). "Something like the mane of a horse, or rather a bunch of sea-weed washed about its back." So much of the body as was seen was "not used in propelling the animal through the water, either by vertical or horizontal undulation." A calculation of its length was made under a strong preconception of the nature of the beast. The head, *e. g.* is stated to be "without any doubt that of a snake;" and yet a snake would be the last species to which a naturalist conversant with the forms and characters of the heads of animals would refer such a head as that of which Captain M'Quhae has transmitted a drawing to the Admiralty, and which he certifies to have been accurately copied in the 'Illustrated London News' for October 28, 1848, p. 265. Your Lordship will observe, that no sooner was the captain's attention called to the object than "it was discovered to be an enormous serpent," and yet the closest inspection of as much of the body as was visible, *à fleur d'eau*, failed to detect any undulations of the body, although such actions constitute the very character which would distinguish a serpent or serpentiform swimmer from any other marine species. The foregone conclusion, therefore, of the beast's being a sea-serpent, notwithstanding its capacious vaulted cranium and stiff inflexible trunk, must be kept in mind in estimating the value of the approximation made to the total length of the animal, as "at the very least 60 feet." This is the only part of the description, however, which seems to me to be so uncertain as to be inadmissible in an attempt to arrive at a right conclusion as to the nature of the animal. The more certain characters of the animal are these:—Head, with a convex, moderately capacious cranium, short obtuse muzzle, gape of the mouth not extending further than to beneath the eye, which is rather small, round, filling closely the palpebral aperture; colour dark brown above, yellowish white beneath; surface smooth, with-

out scales, scutes, or other conspicuous modifications of hard and naked cuticle. And the captain says, "Had it been a man of my acquaintance, I should have easily recognized his features with my naked eye." Nostrils not mentioned, but indicated in the drawing by a crescentic mark at the end of the nose or muzzle. All these are the characters of the head of a warm-blooded mammal; none of them those of a cold-blooded reptile or fish. Body long, dark brown, not undulating, without dorsal or other apparent fins; "but something like the mane of a horse, or rather a bunch of sea-weed washed about its back." The character of the integuments would be a most important one for the zoologist in the determination of the class to which the above-defined creature belonged. If any opinion can be deduced as to the integuments from the above indication, it is that the species had hair, which, if it was too short and close to be distinguished on the head, was visible where it usually is the longest, on the middle line of the shoulders or advanced part of the back, where it was not stiff and upright like the rays of a fin, but "washed about." Guided by the above interpretation of the "mane of a horse, or a bunch of sea-weed," the animal was not a cetaceous mammal, but rather a great seal. But what seal of large size, or indeed of any size, would be encountered in latitude $24^{\circ} 44'$ south, and longitude $9^{\circ} 22'$ east—viz. about 300 miles from the western shore of the southern end of Africa? The most likely species to be there met with are the largest of the seal tribe, *e. g.* Anson's sea-lion, or that known to the southern whalers by the name of the "Sea Elephant," the *Phoca proboscidea*, which attains the length of from 20 to 30 feet. These great seals abound in certain of the islands of the southern and antarctic seas, from which an individual is occasionally floated off upon an iceberg. The sea-lion exhibited in London last spring, which was a young individual of the *Phoca proboscidea*, was actually captured in that predicament, having been carried by the currents that set northward towards the Cape, where its temporary resting-place was rapidly melting away. When a large individual of the *Phoca proboscidea* or *Phoca leonina* is thus borne off to a distance from its native shore, it is compelled to return for rest to its floating abode, after it has made its daily excursion in quest of the fishes or squids that constitute its food. It is thus brought by the iceberg into the latitudes of the Cape, and perhaps further north, before the berg has melted away. Then the poor seal is compelled to swim as long as strength endures; and in such a predicament I imagine the creature was that Mr. Sartoris saw rapidly approaching the *Dædalus* from before the beam, scanning, probably, its capabilities as a resting-place, as it paddled its long stiff body past the ship. In so doing, it would raise a head of the form and colour described and delineated by Captain M'Quhae, supported on a neck also of the diameter given; the thick neck passing into an inflexible trunk, the longer and coarser hair on the upper part of which would give rise to the idea, especially if the species were the *Phoca leonina*, explained by the similes above-cited. The organs of locomotion would be out of sight. The pectoral fins being set on very low down, as in

my sketch, the chief impelling force would be the action of the deeper immersed terminal fins and tail, which would create a long eddy, readily mistakeable by one looking at the strange phænomenon with a sea-serpent in his mind's eye, for an indefinite prolongation of the body.

It is very probable that not one on board the *Dædalus* ever before beheld a gigantic seal freely swimming in the open ocean. Entering unexpectedly upon that vast and commonly blank desert of waters, it would be a strange and exciting spectacle, and might be well interpreted as a marvel: but the creative powers of the human mind appear to be really very limited, and on all the occasions where the true source of the "great unknown" has been detected—whether it has proved to be a file of sportive porpoises, or a pair of gigantic sharks,—old Pontoppidan's sea-serpent with the mane has uniformly suggested itself as the representative of the portent, until the mystery has been unravelled.

The vertebræ of the sea-serpent described and delineated in the 'Wernerian Transactions,' vol. i., and sworn to by the fishermen who saw it off the Isle of Stronsa (one of the Orkneys), in 1808, two of which vertebræ are in the Museum of the College of Surgeons, are certainly those of a great shark, of the genus *Selache*, and are not distinguishable from those of the species called "basking-shark," of which individuals from 30 feet to 35 feet in length have been from time to time captured or stranded on our coasts.

I have no unmeet confidence in the exactitude of my interpretation of the phænomena witnessed by the captain and others of the *Dædalus*. I am too sensible of the inadequacy of the characters which the opportunity of a rapidly passing animal, "in a long ocean swell," enabled them to note, for the determination of its species or genus. Giving due credence to the most probably accurate elements of their description, they do little more than guide the zoologist to the class, which, in the present instance, is not that of the serpent or the saurian.

But I am usually asked, after each endeavour to explain Captain M'Quhae's sea-serpent, "Why there should not be a great sea-serpent?"—often, too, in a tone which seems to imply, "Do you think, then, there are not more marvels in the deep than are dreamt of in your philosophy?" And freely conceding that point, I have felt bound to give a reason for scepticism as well as faith. If a gigantic sea-serpent actually exists, the species must of course have been perpetuated through successive generations from its first creation and introduction in the seas of this planet. Conceive, then, the number of individuals that must have lived and died and have left their remains to attest the actuality of the species during the enormous lapse of time from its beginning to the 6th of August last! Now, a serpent, being an air-breathing animal with long vesicular and receptacular lungs, dives with an effort, and commonly floats when dead; and so would the sea-serpent until decomposition or accident had opened the tough integument and let out the imprisoned gases. Then it would sink, and, if in deep water, be seen no more until the sea rendered up its dead, after the lapse of the æons

requisite for the yielding of its place to dry land—a change which has actually revealed to the present generation the old saurian monsters that were entombed at the bottom of the ocean of the secondary geological periods of our earth's history. During life, the exigencies of the respiration of the great sea-serpent would always compel him frequently to the surface; and when dead and swollen—

“ Prone on the flood, extended long and large,
he would

“ Lay floating many a rood; in bulk as huge
As whom the fables name of monstrous size,
Titanian or earth-born that warr'd on Jove.”

Such a spectacle, demonstrative of the species if it existed, has not hitherto met the gaze of any of the countless voyagers who have traversed the seas in so many directions. Considering, too, the tides and currents of the ocean, it seems still more reasonable to suppose that the dead sea-serpent would be occasionally cast on shore. However, I do not ask for the entire carcase. The structure of the back-bone of the serpent tribe is so peculiar, that a single vertebra would suffice to determine the existence of the hypothetical Ophidian; and this will not be deemed an unreasonable request, when it is remembered that the vertebræ are more numerous in serpents than in any other animals. Such large, blanched, and scattered bones on any sea-shore would be likely to attract even common curiosity; yet there is no vertebra of a serpent larger than the ordinary pythons and boas in any museum in Europe.

Few sea-coasts have been more sedulously searched, or by more acute naturalists (witness the labours of Sars and Lovén), than those of Norway. Krakens and sea-serpents ought to have been living and dying thereabouts from long before Pontoppidan's time to our day, if all tales were true; yet have they never vouchsafed a single fragment of their skeleton to any Scandinavian collector; whilst the other great denizens of those seas have been by no means so chary. No museums, in fact, are so rich in the skeletons, skulls, bones, and teeth of the numerous kinds of whales, cachalots, grampuses, walruses, sea-unicorns, seals, &c., as those of Denmark, Norway, and Sweden; but of any large marine nondescript or indeterminable monster they cannot show a trace.

I have inquired repeatedly whether the natural-history collections of Boston, Philadelphia, or other cities of the United States, might possess any unusually large ophidian vertebræ, or any of such peculiar form as to indicate some large and unknown marine animal; but they have received no such specimens.

The frequency with which the sea-serpent has been supposed to have appeared near the shores and harbours of the United States has led to its being specified as the “ American Sea Serpent;” yet out of the 200 vertebræ of every individual that should have lived and died in the Atlantic since the creation of the species, not one has yet been picked up on the shores of America. The diminutive snake, less than a yard in length, “ killed upon the sea-shore,” apparently beaten to death, “ by some labouring people of Cape Ann,” United States (see the 8vo pamphlet, 1817, Boston, page 38), and

figured in the 'Illustrated London News,' October 28, 1848, from the original American memoir, by no means satisfies the conditions of the problem. Neither do the *Saccopharynx* of Mitchell, nor the *Ophiognathus* of Harwood—the one $4\frac{1}{2}$ feet, the other 6 feet long; both are surpassed by some of the congers of our own coasts, and, like other murænid fishes and the known small sea-snakes (*Hydrophis*), swim by undulatory movements of the body.

The fossil vertebræ and skull which were exhibited by Mr. Koch in New York and Boston as those of the great sea-serpent, and which are now in Berlin, belonged to different individuals of a species which I had previously proved to be an extinct whale; a determination which has subsequently been confirmed by Professors Müller and Agassiz. Mr. Dixon, of Worthing, has discovered many fossil vertebræ in the Eocene tertiary clay at Bracklesham, which belong to a large species of an extinct genus of serpent (*Palæophis*), founded on similar vertebræ from the same formation in the Isle of Sheppey. The largest of these ancient British snakes was 20 feet in length; but there is no evidence that they were marine.

The Sea Saurians of the secondary periods of geology have been replaced in the tertiary and actual seas by marine mammals. No remains of Cetacea have been found in lias or oolite, and no remains of Plesiosaur, or Ichthyosaur, or any other secondary reptile, have been found in Eocene or later tertiary deposits, or recent, on the actual sea-shores; and that the old air-breathing saurians floated when they died has been shown in the 'Geological Transactions' (vol. v., second series, p. 512). The inference that may reasonably be drawn from no recent carcase or fragment of such having ever been discovered, is strengthened by the corresponding absence of any trace of their remains in the tertiary beds.

Now, on weighing the question, whether creatures meriting the name of "great sea-serpent" do exist, or whether any of the gigantic marine saurians of the secondary deposits may have continued to live up to the present time, it seems to me less probable that no part of the carcase of such reptiles should have ever been discovered in a recent or unfossilized state, than that men should have been deceived by a cursory view of a partly submerged and rapidly-moving animal, which might only be strange to themselves. In other words, I regard the negative evidence, from the utter absence of any of the recent remains of great sea-serpents, krakens, or Enaliosauria, as stronger against their actual existence than the positive statements which have hitherto weighed with the public mind in favour of their existence. A larger body of evidence from eye-witnesses might be got together in proof of ghosts than of the sea-serpent.

Description of a new species of Smynthurus (S. baulastinus).

By J. HARDY, Esq.

This small species of *Smynthurus* was very abundant upon the leaves of potatoes and other plants in gardens, deriving its sustenance from their sap. The leaves, apparently in consequence, had numerous minute black spots dispersed over their surface, and to it, while the